MEL'NIKOV, Ye.F.

Increasing the fish yields of ponds; experiments in the rearing of tench. Nauch. dokl. vys. shkoly; biol. nauki no.4:24-28 '61.
(MIRA 14:11)

1. Rekomendovana kafedroy zoologii pochvenochnykh Dnepropetrovskogo Gosudarstvennogo universiteta im. 300-letiya vossoyedineniya Ukrainy s Rossiyey.
(UKRAINE—TENCH)

MEL'NIKOV, Ye.F.

Ecologic characteristics of the intensification of growth of tench (Tinca tinca L.) on pond fish farms of the Ukrainian S.S.R. Vop. ekol. 5:133-135 '62. (MIRA 16:6)

1. Institut gidrobiologii AN UkrSSR, Kiyev.
(Ukraine--Tench)

POPOV, A.F., inzh.; CHUNIKHIN, K.T., inzh.; MEL'NIKOV, Ye.G., inzh.

Reinforced-concrete elements for farm buildings. Bet. i zhel.-bet. no.5:205-206 My '61. (MIRA 14:6)
(Reinforced concrete construction)
(Farm buildings)

MEL'NIKOV, Ye.Kh. [Mel'nykov, IE.Kh.], starshiy elektrik

Device for the electric heating of soldering irons. Mekh. sil'.hosp. 10 no.12:14 (MIRA 13:3)

1. Kolkhoz "Prapor kommunizmu," Aleksandriyskogo rayona, Kirovogradskoy oblasti.

(Solder and soldering)

MEL'NIKOV, YE. L.

Е. Л. Мельников защитил 25.[illegible] 1960 г. в Совете Харьковского медицинского института диссертацию на тему «*Длительная антибактериальная терапия больных открытыми формами туберкулеза легких методом чередования стрептомицина и фтивазида*».

Установлено, что длительное антибактериальное лечение больных открытыми формами легочного туберкулеза методом чередования стрептомицина и фтивазида ежемесячно в комбинации с ПАСК в большом проценте случаев оказывает положительный эффект; при этом побочные явления появляются редко.

Candidate of Medical Sciences

Dissertations approved by the Higher Attestation Commission in January and February of 1961. Terap. arkh. no.6:117-121 '61

MEL'NIKOV, Ye. L., Cand Med Sci -- (diss) "Prolonged antibacterial therapy of patients with open forms of pulmonary tuberculosis by the method of alternation of streptomycin and phtybazide. (Effectiveness, prevention of disease permanence, course of the disease in the presence of medicinal resistance in the mycobacteria of tuberculosis)." Khar'kov, 1960. 15 pp; (Khar'kov State Medical Inst); 200 copies; price not given; (KL, 25-60, 139)

SHMALIY, K.V.; NAKHMANSON, G.L.; MEL'NIKOV, Ye.L. (Khar'kov); BORINA, M.Ya. (Kiyev); SOTNIKOVA, N.A.; BORSHCHEVSKIY, M.A. (Odessa)

Primary drug resistance in pulmonary tuberculosis. Vrach. delo no.1: 98-100 Ja '62. (MIRA 15:2)
(TUBERCULOSIS) (BACTERIA, EFFECT OF DRUGS ON)

SHMALIY, K.V., starshiy nauchnyy sotrudnik; MEL'NIKOV, Ye.L., kand.med.
nauk

Effect of drug resistance on the course of the tuberculous process.
Probl. tub. 41 no.8:73-74 '63. (MIRA 17:9)

1. Iz otdeleniya legochnogo tuberkuleza (zav. - doktor med. nauk L.I.Vil'nyanskiy) i mikrobiologicheskoy laboratorii (zav. - starshiy nauchnyy sotrudnik K.V.Shmaliy) Ukrainskogo nauchno-issledovatel'skogo instituta tuberkuleza (dir. - dotsent A.G.Khomenko).

TRUMBACHEV, V.F., kand.tekhn.nauk; MEL'NIKOV, Ye.M., inzh.

Research with models on the distribution of stresses in a block of untouched ore containing weak interbeds under approximately the same conditions as at the Yakovlevo deposit (Kursk Magnetic Anomaly). Trudy Inst. gor. dela 5:50-56 '60. (MIRA 14:5)
(Kursk magnetic anomaly—Rock pressure)
(Geological models)

[illegible], I. A.

Dissertation: "Investigation of the Technological Effectiveness of Threshing in Rolling Mills in the Processing of Grain into Flour." Cand Tech Sci, Moscow Technological Inst of the Food Industry, Moscow, 1954. (Referativnyy Zhurnal--Khimiya, [illegible], [illegible], Apr 54.

SO: SUM 284, 26 Nov 1954

M

GINZBURG, M. , kand.tekhn.nauk; MEL'NIKOV, Ye., kand.tekhn.nauk

Automatic machine for sorting and separating groats. Muk.-elev. prom. 25 no.6:14-16 Je '59. (MIRA 12:9)

1. Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti.
(Grain-handling machinery) (Cereal products--Grading)

L 47504-66

ACC NR: AP6032499 (A) SOURCE CODE: UR/0413/66/000/017/0053/0053

INVENTOR: Utyamyshev, R. I.; Chastukhin, B. S.; Yevteyev, K. M.; Antonov, A. A.; Mel'nikov, Ye. N.

ORG: none

22

TITLE: Device for recording electroplethysmograms. Class 30, No. 185435

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 53

TOPIC TAGS: electroplethysmograph, diagnostic medicine, plethysmography, human physiology, cardiovascular system, cardiology

ABSTRACT: An Author Certificate was issued for an electroplethysmogram recorder incorporating transistorized amplifiers, demodulators, filters, and a stabilized power source. For more reliable performance and to permit the separate and simultaneous recording of pulse waves and complex tissue resistance over long periods without readjustment, the recorder includes a stabilized carrier-frequency generator and a measuring circuit. The latter consists of the secondary coil of the emitter amplifier

Card 1/2 UDC: 615.47:616. .073.173

L 47504-66

ACC NR: AP6032498

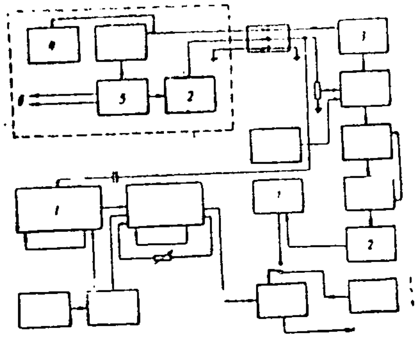

Fig. 1. Device for recording electroplethysmograms

1 - Electronic amplifiers; 2 - demodulators with filters; 3 - stabilized rectifier; 4 - stabilized generator; 5 - measuring circuit; 6 - leads; 7 - silicon stabilitron.

and the primary coil of the output amplifier, to which the leads are attached. A silicon voltage stabilizer eliminates artifacts caused by tissue changes in the vicinity of the leads. Orig. art. has: 1 figure. [DP]

SUB CODE: 06/ SUBM DATE: 23Jan65/ ATD PRESS: 5095

Card 2/2

MEL'NIKOV, Ye.S.; SADOV, A.V.

[Aerial methods in engineering geology and hydrogeology; a brief survey and biographical index of the literature published from 1892 to 1963] Aerometody v inzhenernoi geologii i gidrogeologii; kratkii obzor i bibliograficheskii ukazatel' literatury, opublikovannoi s 1892 po 1963 g. Moskva, Nedra, 1964. 34 p. (MIRA 18:4)

ALEKSANDROVSKIY, Vladimir Vladimirovich [deceased]; MEL'NIKOV,
Ye.V., red.; [illegible], A.A., red.

[Navigation] Navigatsiia. Moskva, Transport, 1965 [illegible]
(MIRA 18:[illegible])

(N)
L 10922-66 EWT(l)/EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/WW/JG/GG
ACC NR: AP5027181 SOURCE CODE: UR/0076/65/039/010/2559/2560

66
B

44,55 44,55
AUTHOR: Shashkov, Yu. M.; Mel'nikov, Ye. V.

44,55
ORG: Giredmet

TITLE: Effect of surface tension on the position of the crystallization front during growing of semiconductor single crystals by the Chokhral'skiy method 14

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 10, 1965, 2559-2560

21,44,55
TOPIC TAGS: single crystal growth, germanium single crystal, silicon single crystal, surface tension, crystallization, semiconductor single crystal

27 18

ABSTRACT: The position of the crystallization front over silicon and germanium melts was measured under various pulling conditions. The melts were heated by electron bombardment at 10^{-5} — 10^{-6} mm Hg, and the height of ascent h of the melt was photographed during growth of a crystal of constant diameter. Changes in thermal conditions associated with changes in pulling rate, ingot diameter, and rotation rate (i.e., with temperature gradients in the ingot and in the melt near the crystallization front) were found to have virtually no effect on the height of ascent of the melt. The height of ascent does vary in regular fashion with the diameter of the growing crystal, rising sharply at first, then tending toward a constant value; it is lower for germanium than for silicon. The data show that the surface tension has a major influence on the height of ascent of the crystallization front. High-speed motion-picture photography (up to 2000 frames/sec) showed that the angle between the surface

Card 1/2 UDC: 621.315.592

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ACC NR: AP5027181

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of the growing crystal and the melt fluctuates both with time and with the crystallization front, and amounts to an average of 15 to 20° during growing of constant-diameter ingots. Orig. art. has: 3 figures.

SUB CODE: 20 / SUBM DATE: 29Feb64 / ORIG REF: 001 / OTH REF: 003

Card 2/2

ACC NR: AR7000836 SOURCE CODE: UR/0058/66/000/009/A048/A048

AUTHOR: Shashkov, Yu. M.; Mel'nikov, Ye. V.

TITLE: Surface phenomena in pulling single crystals by the Czochralski method

SOURCE: Ref. zh. Fizika, Abs. 9A404

REF SOURCE: Sb. Poverkhnostn. yavleniya v rasplavakh i voznikayushchikh iz nikh tverd. fazakh. Nal'chik, 1965, 585-589

TOPIC TAGS: crystallography, crystal growth, semiconductor crystal, crystal pulling, Czochralski method, germanium crystal, silicon crystal

ABSTRACT: A study was made of the effects of the parameters of pulling germanium and silicon single crystals with a constant cross section on the rise of the melt up to the crystallization boundary. It was found that the height of pulling is practically independent of the rate of pulling and speed of rotation of the crystal being pulled. In excluding the pulling mechanism of the crystal by varying the temperature, one can change the rise which affects the diameter of the crystal. The curve showing the dependence of the rise on the crystal diameter lies

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ACC NR: AR7000836

approximately half as high as the theoretical. It is taken into account that the wetting angle of the crystal by the melt $\alpha \neq 0$ brings about a correspondence between the theoretical with the experimental. Motion pictures showed that the wetting angle α fluctuates in time and according to the crystallization and that its average for Si is approximately 15°. [Translation of abstract] [SP]

SUB CODE: 20/

Card 2/2

MEL'NIKOV, YE. YA -

AUTHORS: Mel'nikov, Ye. Ya., Engineer, 67-1-1/20
Kargin, S. I., Engineer

TITLE: Application of Oxygen in Nitrogen Industry
(Primeneniye kisloroda v azotnoy promyshlennosti)

PERIODICAL: Kislorod, 1958, Nr 1, pp. 1-15 (USSR)

ABSTRACT: Oxygen which was produced in Soviet Nitrogen Industry only as waste product in nitrogen industry until 1942 and which in general was used only little has been utilized more intensively only since 1942. Since 1944 oxygen was used in the first gas producer station constructed in the USSR with which the current coking was made for ammonia products. Since this time the application of oxygen steadily increased in Soviet industry. In 1945 it had increased by the 3,5 fold and in 1956 by the 5,7 fold as compared to 1945. Especially the recent discoveries of rich petroleum and natural gas sources have contributed towards this increase. In this connection the Soviet ammonia production from natural gas was started with the use of oxygen. The Soviet planning aims at the use of oxygen in the case of 45 % of the total production

Card 1/4

of ammonia by 1960 (instead of the hitherto 15 %). Moreover, oxygen is used now also to an increasing extent for the production of weak nitric acid, methyl- and isobutyl alcohol, as well as of acetylene (by means of oxygen pyrolysis). In the chapter: coking of brown coal in the gas generator "ГИАП" a plant is described which is now widely used in the USSR and also in the other socialist countries. The main principle of this plant consists in the moist oxygen blast with an intensity of 1500-4500 nm^3 per m^3 of the coke furnace. In the chapter: continuous coking, a new plant is described which is used for steam operated air oxygen blasts in ammonia production of for steam operated oxygen blasts in the production of synthetic alcohols. In the chapter: peat coking, it is said that in the USSR (disposing of move than 60 % of the world's stock of peat) this fuel is used as raw material for nitrogen industry especially in those areas where other fuel lacks. The above described "ГИАП" plant is used for the coking of peat which had been dried before to 10-15 % of moisture content. In the chapter: catalytic steam operated oxygen - conversion of hydrocarbon gases, a process is described which consists of the catalytic

67-1-1/20

Application of Oxygen in Nitrogen Industry

oxidation of methane or its homologs by means of oxygen until the oxidation of carbon or hydrogen. This process is now introduced in the USSR to an increasing ex'ent and many new industrial plants based on this process are constructed. In the chapter: high temperature conversion of hydrocarbon gases, the process of a non catalytic incomplete oxidation of methane or its homologs by means of oxygen at high temperatures is described. The described plan operates at a temperature of 1450°. A similar process, however, under the use of pressure was introduced for the first time in Soviet industry. In the chapter: incomplete exidation of mazut or petroleum by non catalytical means, a process is described by means of which gases are produced which are used for the synthesis of ammonia, alcohols and for the production of hydrogen. In the chapter: oxidation of higher hydrocarbons in petroleum gases at low temperatures a method is described which is used for the practical explicitation of these gases which in this connection are used as raw material for the production of synthetic ammonia, spirits and aldehydes. The scheme of production is given. In the chapter: production of acetylene from natural gas, the production

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Application of Oxygen in Nitrogen Industry 67-1-1/20

by means of thermo oxidation pyrolysis of natural methane by means of oxygen is described. This production method will play an important role in Soviet chemical industry in the near future. The plant used for this purpose is described. In the chapter: the application of oxygen in nitrogen production, 2 processes are described:

1) oxidation of NH_3 to NO and water, and
2) oxidation of NO to NO_2 the reation of which water, produces nitric acid. The plant used for this method is equally described.

There are 8 figures, 13 tables, and 19 references, 16 of which are Slavic

AVAILABLE: Library of Congress

1. Industry-USSR 2. Oxygen-Production

Card 4/4

S/081/62/000/006/051/117
B149/B108

AUTHOR: Mel'nikov, Ye. Ya.

TITLE: Modern techniques for the manufacture of technological gas for the synthesis of ammonia

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1962, 390, abstract 6K57 (Tr. Leningr. inzh.-ekon. in-ta, no. 37, 1961, 76 - 95)

TEXT: A comparison is given of the investments and cost price of synthetic NH_3 in the USSR and in the U.S.A. The structures of the raw material base of the nitrogen products industry in the USSR and in capitalist countries are compared. The techniques discussed are: catalytic oxygen-vapor conversion of natural gas under pressure; high temperature conversion of natural gas under pressure; washing the gas free of CO with liquid N_2; thermal oxidation and pyrolysis of natural gas; partial oxidation of mazut or petroleum by non-catalytic methods. The utilization of the petroleum refining gases and of residual gases in organic syntheses, and the treatment of coke gas are also considered. [Abstracter's note: Complete translation.]

Card 1/1

MEL'NIKOV, Ye.Ya. (Moskva)

Modern flow sheets for the production of technological gas for the synthesis of ammonia. Trudy LIEI no.37:76-95 '61. (MIRA 18:4)

MEL'NIKOV, Ye.Ye. (Leningrad)

Achievements of socialist competition on the eve of the Congress.
Shvein.prom. no.5:4-5 Jl-Ag [i.e.S-O] '61. (MIRA 14:10)
(Leningrad--Clothing industry--Labor productivity)

MEL'NIKOV, Ye.Ye.

Under the banner of the decisions of the 22d Congress of the CPSU. Shvein.prom. no.2:1-3 Mr-Ap '62. (MIRA 15:4)
(Leningrad--Clothing industry)

MEL'NIKOV, Yevgeniy Yevgen'yevich; KARASEV, V.K., kand. tekhn.nauk, red.; VASIL'YEV, Yu.A., red.izd-va; [illegible]VIRTS, V.L., tekhn.red.

[New developments in the mechanization of clothing production in the factories of the Administration of the Clothing Industry of the Leningrad City Executive Committee] Novoe v mekhanizatsii shveinogo proizvodstva na fabrikakh Upravleniia shveinoi promyshlennosti Lengorispolkoma, stenogramma lektsii. Leningrad, 1962 [illegible] p. (MIRA 16:10)

(Leningrad--Clothing industry)

MEL'NIKOV, Ye.Ye. (Leningrad)

Technological progress in the enterprises of the Leningrad clothing industry. Shvein. prom. no. 6:7-10 N-D '65.
(MIRA 18:12)

MEL'NIKOV, Yevgeniy Yevgen'yevich; SPERANSKIY, A.Ye., red.

[Organization of clothing manufacture in the U.S.A.; from the materials of an official trip] Organizatsiia shveinogo proizvodstva v SShA; po materialam komandirovki. Leningra, 1964. 35 p. (MIRA 17:11)

SERDYUKOV, Mstislav Georgiyevich, prof.; MEL'NIKOV, Yu., red.;
LYUDKOVSKAYA, N., tekhn. red.

[Forensic gynecology and forensic obstetrics] Sudebnaia ginekologiia i sudebnoe akusherstvo. Izd.2. Moskva, Izd-vo "Meditsina," 1964. 301 p. (MIRA 17:3)

ACCESSION NR: AP4040670 S/0075/64/019/006/0721/0724

AUTHOR: Moroshkina, T. M.; Mel'nikov, Yu. A.

TITLE: Study of conditions for the chromatographic separation of tungsten from titanium, manganese and nickel followed by spectrographic determination of these elements.

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 6, 1964, 721-724

TOPIC TAGS: tungsten, titanium, manganese, nickel, chromatographic separation, spectrographic analysis, KU 2 cationite.

ABSTRACT: A method was worked out for determining Ni, Mn and Ti impurities in tungsten trioxide comprising preliminary chromatographic separation of tungsten from the impurities and subsequent spectral analysis of these elements. The Ni, Mn and Ti are concentrated under static conditions on the cationite KU-2 and tungsten is washed out in the filtrate after treatment with 1% H_2O_2 in weak acid (0.1 N HCl) which converts the tungsten to pertungstic acid. Almost complete sorption of the Ni, Mn and Ti is effected in ½-4 hours. Traces of tungsten mechanically retained on the cationite are washed out with 0.05 N HCl solution containing 1%

Card 1/2

ACCESSION NR: AP4040670

H_2O_2. The adsorbent resin containing the Ni, Mn and Ti is then burned in a muffle furnace at 600C for 30 minutes. Samples for spectral analysis are then prepared with the residue. The sensitivity of the method is down to 10^{-3} % with a relative error not exceeding 15%. Orig. art. has: 4 tables.

ASSOCIATION: Leningradskiy gosudarstvenny*y universitet im. A. A. Zhdanova (Leningrad State University)

SUBMITTED: 28Jun63 ENCL: 00

SUB CODE: IC NO REF SOV: 007 OTHER: 000

Card 2/2

MEL'NIKOV, Yu.D.; SOKOL, I.B.

Device for locating self-rectifying damages on overhead power transmission lines. Energ. i elektrotekh. prom. no.3:73-74 Jl-S '63. (MIRA 16:10)

1. Laboratoriya TSentral'noy sluzhby releynoy zashchity, avtomatiki i elektroizmeritel'nykh priborov Kiyevskogo energoupravleniya Glavenergo Ministerstva elektrostantsiy SSSR.

MEL'NIKOV, Yu.F.

Table for assembling and inspecting loom guides. Obm.tekh.opyt. [MLP] no.15:27-28 '56. (MIRA 11:11)
(Looms)

GUSAROV, A.D., kand.tekhn.nauk; MEL'NIKOV, Yu.F., inzh.

The problem of hydraulic transportation of clay. Sbor. trud. NIIZHelezobetona no.7:155-163 '62. (MIRA 16:1)
(Clay—Transportation) (Hydraulic conveying)

Mel'nikov, Yu I

FAL'KOVSKIY, V.B.; MEL'NIKOV, Yu.I.; VETROVA, A.V.

Dynamics of chemisorption in bubble plate columns. Zhur.prikl. khim. 30 no,12:1760-1763 D '57. (MIRA 11:1)

1.Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova. (Adsorption) (Plate towers).

MEL'NIKOV, Yu.I.; ROSHCHIN, K.I.; STOLPNIK, S.P., red.; YELAGIN, A.S., tekhn. red.

[Celestial brothers] Nebesnye brat'ia. Moskva, Izd-vo "Sovetskaia Rossiia." 1963. 109 p. (Bibliotechka "V pomoshch' sel'skomu klubnomu rabotniku" no.1) (MIRA 16:6)
(Nikolaev, Andriian Grigor'evich, 1929-)
(Popovich, Pavel Romanovich, 1930-)

SOV/137-58-11-22125

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 11, p 42 (USSR)

AUTHOR: Mel'nikov, Yu. K.

TITLE: Replacement of Conventional Silica-brick Skewback of 10-t Electric Furnace by Chemically bonded Magnesite Chrome (Zamena dinasovoy pyaty svoda desyatitonnoy elektropechi khromomagnezitovoy)

PERIODICAL: Tr. Nevsk. mashinostroit. z-da, 1957, Nr 2, pp 78-79

ABSTRACT: A description is offered of a furnace at the Neva machinery plant having a gantry-lift type roof with uncooled roof ring. The conventional silica brick skewback failed by spalling of internal parts, and the ring overheated. The roof life was 18 heats. After the conventional silica brick in the skewback courses was replaced by chemically-bonded magnesite chrome, roof life increased to 50 heats and that of the skewback portion to 2-3 campaigns. The calculated annual saving is 17,648 rubles.

V. T.

Card 1/1

MEL'NIKOV, Ya. L.

Dissertation: "Expert Criteria for the Determination of the Gravity of Nonfatal Injuries in the Diagnosis of Brain Concussion." Cand Med Sci, Second Moscow State Medical Inst imeni I. V. Stalin, Moscow, 23 Jun 54. (Meditsinskiy Rabotnik, Moscow, 15 Jun 54)

SO: SUM 318, 23 Dec. 1954

MEL'NIKOV, Yu.L.; KUZNETSOVA, L.I.

Clinical documentation in the practice of medical jurisprudence. Zdrav. Belor. 6 no. 10:47-48 O '60. (MIRA 13:10)

1. Iz kafedry sudebnoy meditsiny Vitebskogo meditsinskogo instituta (zaveduyushchiy kafedroy - dotsent Yu.L. Mel'nikov).
(MEDICAL JURISPRUDENCE)

MEL'NIKOV, Yu.L., kand.med.nauk (Moskva)

Medicolegal evaluation of a persisting loss of work capacity in ophthalmology. Vest.oft. no.4:74-79 '61. (MIRA 14:11)

(OPHTHALMOLOGY) (DISABILITY EVALUATION)

TOMILIN, Vitaliy Vasil'yevich; MEL'NIKOV, Yu.L., red.; KUZ'MINA,
N.S., tekhn. red.

[Physiology, pathology and medicolegal expertise on handwriting; on medicolegal identification of persons by their handwriting] Fiziologiia, patologiia i sudebnomeditsinskaia ekspertiza pis'ma; k sudebnomeditsinskomu otozhdestveniiu lichnosti po rukopisnomu tekstu. Moskva, Medgiz, 1963. 234 p. (MIRA 16:10)

(MEDICAL JURISPRUDENCE) (WRITING--IDENTIFICATION)

L,

KHLEBNIKOV, Ye.L. professor; ANDREYEV, O.V., kandidat tekhnicheskikh nauk; BEGAM, L.G., kandidat tekhnicheskikh nauk; BERG, O.Ya., kandidat tekhnicheskikh nauk; GAMAYUNOV, A.I., kandidat tekhnicheskikh nauk; DUCHINSKIY, B.N., kandidat tekhnicheskikh nauk; KAZEY, I.I., kandidat tekhnicheskikh nauk; DEMOKHIN, B.F., kandidat tekhnicheskikh nauk; LUGA, A.A., kandidat tekhnicheskikh nauk; LYALIN, N.B., kandidat tekhnicheskikh nauk; MEL'NIKOV, Yu.L., kandidat tekhnicheskikh nauk; POL'YEVKO, V.P., kandidat tekhnicheskikh nauk; PROKOPOVICH, I.G., kandidat tekhnicheskikh nauk; STRELETSKIY, N.N., kandidat tekhnicheskikh nauk; TYULENEV, Ye.A., kandidat tekhnicheskikh nauk; KHROMETS, Yu.N., kandidat tekhnicheskikh nauk; SHELESTENKO, L.P., kandidat tekhnicheskikh nauk; SHPIRO, G.S., kandidat tekhnicheskikh nauk; YAROSHENKO, V.A., kandidat tekhnicheskikh nauk; ZELEVICH, P.M., inzhener; CHEGODAYEV, N.N.; BOBROVA, Ye.N., tekhnicheskiy redaktor.

[Technical specifications for designing bridges and pipes for railroads of a normal gauge (TUPM-56). Effective July 1, 1957 by order of Ministry of Means of Communication and the Ministry of Transportation Construction, September 15, 1956] Tekhnicheskie usloviia proektirovaniia mostov i trub na zheleznykh dorogakh normal'noi kolei (TUPM-56). Vvedeny v kachestve vremennykh s 1 iiulia 1957 g. prikazom Ministerstva putei soobshcheniia i Ministerstva transportnogo stroitel'stva of 15 sentiabria 1956 g. No.250/TsZ/213. Moskva, Gos.transp.zhel-dor.izd-vo, 1957. 221 p. (MIRA 10:5)

1. Russia (1923- U.S.S.R.), Ministerstvo putey soobshcheniya.
(Railroad bridges--Design)

LESOKHIN, B.F.; MEL'NIKOV, Yu.L.; POL'YEVSKO, V.P.; KHROMETS, Yu.N.;
KAZEY, I.I., kand.tekhn.nauk, red.; GOLOVANOV, A.L., red.;
BOBROVA, Ye.N., tekhn.red.

[Metal bridges; testing the performance of metal spans in
currently used railroad bridges] Metallicheskie mosty;
issledovanie raboty metallicheskikh proletnykh stroenii na
ekspluatiruemykh mostakh. Moskva, Gos. transp. zhel.dor.izd-
vo, 1959. 186 p. (Babushkin. Vsesoiuznyi nauchno-issledovatel'-
skii institut transportnogo stroitel'stva. Trudy, no.29)
(MIRA 12:8)

(Railroad bridges--Testing)

MATAROV, I.A., kand.tekhn.nauk, laureat Stalinskoy premii; MEL'NIKOV, Yu.L., kand.tekhn.nauk, POLYAKOV, I.D., inzh.

Experimental investigations of hinged joints in precast concrete construction elements subjected to axial stresses. Trudy TSNIIS no.37:5-70 '60. (MIRA 13:13)
(Strains and stresses) (Bridges, Concrete)

POL'YEVKO, V.P., kand.tekhn.nauk; MEL'NIKOV, Yu.L., kand.tekhn.nauk

Functioning of the joints of precast reinforced concrete spans. Bet. i zhel.-bet. 8 no.10:456-458 0 '62.
(MIRA 15:11)

(Building--Materials) (Railroad bridges)

MEL'NIKOV, Yu.L., kand.tekhn.nauk.

Loop joints in flexible slabs of precast reinforced concrete bridges.
Transp. stroi. 12 no.11:49-51 N '62. (MIRA 15:12)
(Bridges, Concrete)

MEL'NIKOV, Yu.L., kand. tekhn. nauk; ZAKHAROV, L.V., inzh.

Choosing efficient elements for joints in precast reinforced concrete bridge spans. Bet. i zhel.-bet. no.11:494-497 N '61. (MIRA 16:8)

(Bridges, Concrete)
(Precast concrete construction)

MEL'NIKOV, Yu.L., kand. tekhn. nauk; ZAKHAROV, L.V., inzh.; KOLOKOLOV, N.M., inzh.; UKRAINCHIK, M.M., inzh., red.

[Joints of prefabricated reinforced concrete bridge span structures] Styki sbornykh zhelezobetonnykh proletnykh stroenii mostov. Moskva, Orgtransstroi, 1962. 79 p. (MIRA 17:7)

1. Laboratoriya zhelezobetonnykh mostov TSentral'nogo instituta nauchno-tekhnicheskoy informatsii mashinostroyeniya (for Mel'nikov, Zakharov, Kolokolov).

ROZHNOV, Vladimir Yevgen[illegible]; [illegible], I.A., red.

(Expert psychiatric [illegible] and other addictions) Sudebno-psikhiatricheskaia ekspertiza alkogolizma i drugikh narkomanii. Moskva, Meditsina, 1964. [illegible] p. (MIRA 17:12)

ZAKHAROV, I.V., inzh.; MEL'NIK [illegible]

Using polymer materials [illegible] elements. Transp. stroi. [illegible] no.6:44-46 Je '64. (MIRA 18:2)

L 26525-66 EWP(j)/EWT(m)/T/EWP(v) RM/WW

ACC NR: AP6017410 SOURCE CODE: UR/0097/65/000/006/0028/0031

AUTHOR: Seregin, I. N. (Candidate of technical sciences); Mel'nikov, Yu. L. (Candidate of technical sciences); Zakharov, L. V. (Engineer); Sakanskiy, Yu. N. (Engineer)

24
B

ORG: none

TITLE: Glued butt joints in preassembled reinforced concrete span structures

SOURCE: Beton i zhelezobeton, no. 6, 1965, 28-31

TOPIC TAGS: reinforced concrete, highway bridge, railway bridge

ABSTRACT: At the present time, as a result of scientific research work, all the conditions have been created for making wide use of structures attached together lengthwise by glued joints in practical bridge construction. Rational methods have been developed for making butt joints of reinforced concrete elements, as well as methods for designing the component structures with glued joints. An experimental check has been made of several ways of making up preformed blocks for the component structures joined lengthwise.

The technology of making glued joints at positive temperatures has been worked out and tested in building large bridges across the Moscow River at Sherepikha, and the Don River at Rostov. Methods have been worked out for regulating the times required for the glue to act within wide limits. Worked out at the present time, and going through an experimental check under production conditions are ways of producing glued joints at negative temperature.

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UDC: 691.328:624.21

Card 1/2

L 26525-66

ACC NR: AP6017410

A technology has been worked out for hinged mounting of the component structures along the length with glued joints. The rates achieved in mounting are even now a factor of 3-5 in excess of the rates using glued joints, and there is a reduction in the labor required for mounting.

A large amount of experience has been obtained in the field of designing structures joined lengthwise for bridges with large spans, which even now it is possible to develop typical designs for span structures and supports joined lengthwise by glueing and to work out the technology of factory production for the elements of structures of this type. These measures will bring a great reduction in the time required to build bridges, and reduce the amount of labor and the labor cost in construction. Orig. art. has: 3 figures and 1 table. [JPRS]

SUB CODE: 13, 11 / SUBM DATE: none

Card 2/2

[illegible], Yuriy Leon[illegible] [illegible]
[illegible], [illegible]

[illegible]

[illegible], I.T.; MEL'NIKOV, N.M., KHAN CHZHEN'-SYAN

Static stability of a complex system having a distant power plant with generators equipped with automatic excitation regulation in the Moscow Electric Power System. Trudy MEI no.[illegible]:[illegible]84-[illegible]94 '6[illegible]. (MIRA 17:12)

SOV/177-58-5-5/30

17(12)

AUTHORS: Bogatyrev, M.F., Guard Lieutenant-Colonel of the Medical Corps, Mel'nikov, Yu.N., Captain of the Medical Corps, and Gofman, V.A., Major of the Medical Corps

TITLE: The Application of Furacillin in Surgery (Primeneniye furatsillina v khirurgicheskoy praktike)

PERIODCIAL: Voyenno-meditsinskiy zhurnal, 1958, Nr 5, pp 27 - 32 (USSR)

ABSTRACT: The authors report on the application of furacillin in surgical treatment. According to S.P. Zayeva's data, furacillin is highly effective against anaerobian infections. She has proved that vitamin C increases the effect of furacillin, and furacillin on its part reduces the content of vitamin B_1 and PP in the organism. S.G. Mogil'nitskiy, N.I. Magalif, P.I. Stradyn', and M.M. Ferber indicate that a furacillin solution locally applied does not stimulate the tissue and helps to develop granulation and

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SOV/177-58-5-5/30

The Application of Furacillin in Surgery

epithelization and, consequently, the healing of the wound. Furacillin also spares the mucous membrane much more than penicillin. T.I. Ishumina has proved that in parental furacillin injections, the phagocytic reaction increases. Based on case histories, their own tests, and those of the above mentioned scientists, the authors concluded that furacillin is an effective chemico-therapeutic remedy in the prophylaxis of purulent infections in surgery and in healing various purulent processes. Furacillin is a full substitute for antibiotics. Concerning its antibacterial features and its resistibility to changes of the environment (temperatures, etc.), furnacillin is especially useful in polyclinics.

Card 2/2

L 63076-65 EEC-4/EED-2/EEO-2/EWA(h)/EWT(d)/EWT(1)/FSS-2 Pl-4/Pn-4/Po-4/Pac-4/Peb
ACCESSION NR: AP5013031 JM UR/0106/65/000/005/0050/0056
621.391.171:621.391.154 37
3

AUTHOR: Mel'nikov, Yu. N.; Ol'derogge, G. B.

TITLE: Some problems of noise immunity of digital-information transmission under group-error conditions 25

SOURCE: Elektrosvyaz', no. 5, 1965, 50-56

TOPIC TAGS: digital information, digital information transmission, noise immunity 4

ABSTRACT: The association is considered between the noise-immunity requirement and the length of a meaningful segment (word, message); also, between the length of a group error and the error distribution. The noise immunity of a link (channel) is evaluated as a probability of pulse distortion and the curve of distribution of the length of group errors. Formulas for estimating the error probability, with a known distribution of the length of malfunction groups, are

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L 63076-65
ACCESSION NR: AP5013031

presented; the formulas are valid for any law of error distribution. The tolerable probability of distorting the digit is determined for KTDS, Milgo, A-1, and Kineplex transmission systems described by A. V. Fontain and R. G. Gallager (Proc. IRE, 1961, no. 6). With a group error distribution, the use of correcting codes is not efficient because the redundancy associated with such codes results in such an increase in the probability of distortion that it cannot be offset by the code correcting ability. The use of error-detecting codes and the repetition of messages on request seems to be more promising. Orig. art. has: 2 figures, 16 formulas, and 2 tables.

ASSOCIATION: none

SUBMITTED: 13Oct64 ENCL: 00 SUB CODE: EC, DP

NO REF SOV: 005 OTHER: 002

Card 2/2

89

S/024/60/000/005/006/017
E140/E435

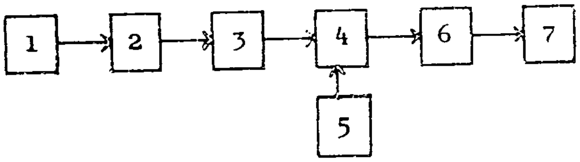
6,9500

AUTHOR: Mel'nikov, Yu.N. (Moscow)

TITLE: Comparison of Two Methods for Utilizing Unidimensional Message Statistics to Increase Noise Immunity

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1960, No.5, pp.116-123

TEXT: The work attempts to determine the relative efficiencies of two basic procedures for anti-noise coding. \\
First method (Fig.1):



The message source 1 has a certain redundancy which is eliminated by statistical coding 2 ; artificial redundancy using a Hamming, Slepian or Meshkovskiy coding 3 introduces artificial redundancy to increase noise immunity, noise 5 is introduced
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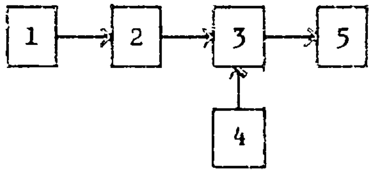
S/024/60/000/005/006/017
E140/E435

Comparison of Two Methods for Utilizing Unidimensional Message Statistics to Increase Noise Immunity

into the channel 4 characterized by the probability of erroneous pulse discrimination p ; 6 and 7 introduce the reverse decoding. Method 2 (Fig.2):



Based on the statistics of the message symbols obtained from the source 1 statistically noise immunity coding is generated by 2 ; noise 4 is introduced into the channel 3 and the resultant message is decoded in 5 . [Abstractor's note: In method 1 the "statistical" coding introduced by 2 is in the sense of Huffman's optimal coding]. The author lists certain

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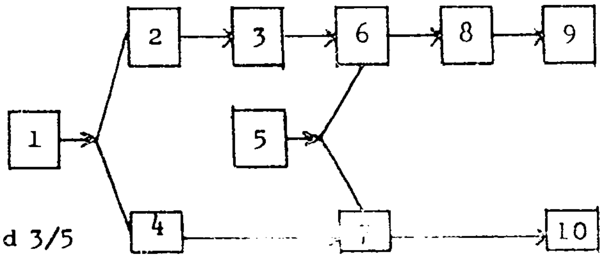
Comparison of Two Methods for Utilizing Unidimensional Message Statistics to Increase Noise Immunity

disadvantages of method 1. These include complicated apparatus and the accumulation of error which may cause a number of symbols to be affected. Since he considers method 2 to be superior technically, an experimental study was undertaken to determine the relative noise immunity of the two codes. The author considers that the noise immunity of two transmission methods can be compared only when the number of symbols required to transmit a given quantity of information is equal in the two systems, secondly that the noise in both cases is the same. The experiment was carried out by the equipment shown (Fig.3).



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Comparison of Two Methods for Utilizing Unidimensional Message Statistics to Increase Noise Immunity

1 source of information, 2 statistical coding device,
3 Hamming coder, 4 statistically-noise-immunity coder,
5 noise source, 6, 7 noise mixers, 8 Hamming decoder,
9 statistical code decoder, 10 statistically-noise-immunity-code decoder.

A sequence of four symbols A, B, C, D was generated according to random number tables. The statistical code used is shown (Table 1).

Symbols	Code Combination
A	0
B	10
C	110
D	1110

The statistically noise immunity code is shown in Fig. 4 where symbol A corresponds to region 1, B to region 2, C to region 3, D to region 4, corresponding to the statistical distributions shown in Table 2. The results of the experiment indicate that at

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Comparison of Two Methods for Utilizing Unidimensional Message Statistics to Increase Noise Immunity

low signal/noise ratios method 2 is superior, at high ratios method 1. The crossover point depends on the cost assigned to positional errors (as contrasted to substitutional errors). Acknowledgments are expressed to A.A.Kharkevich for his advice and to V.A.Poltoratska for carrying out the experiment. There are 6 figures, 5 tables and 9 references: 5 Soviet and 4 English.

SUBMITTED: February 25, 1960

Card 5/5

S/024/60/000/006/003/015
E140/E463

6/500

AUTHOR: Mel'nikov, Yu.N. (Moscow)

TITLE: On the Best Distribution of Regions of Correct Reception With Statistical-Noise-Suppressing Coding

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1960, No.6, p.107-112

TEXT: The paper is a continuation of the work in Ref. 1) to (3). The author here presents an algorithm for determining the number of binary code combinations to be assigned to each character of the noise-resistant code. The assignment is to be done in such manner as to maximize the mean probability of correct reception

Eq. (1)

$$P_{\text{ср пр}} = \sum_{s=1}^{N} \alpha_s p(r_s) \qquad (1)$$

where N is the number of characters, α_s is the probability that the s-th character has been transmitted, $p(r_s)$ is the probability of correct reception of the s-th signal, r_s is the magnitude of the region of correct reception of the s-th signal. It is assumed that the binary code combinations assigned to a given character

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S/024/60/000/006/003/015
E140/E463

On the Best Distribution of Regions of Correct Reception With Statistical-Noise-Suppressing Coding

are those closest (in the Hamming sense) to the binary combination corresponding to the transmitted coded character. At the Hamming distance i there are n!/i!(n - i)! binary combinations. Depending on the a priori statistical properties of the message, some or all of these will be assigned to a given transmitted code combination. The ideal distribution would be one in which all combinations up to a given distance were assigned to a given transmitted combination, and none above this distance, called the nodal distribution. However, for arbitrary statistical distributions of the message characters, the optimal noise resistance may not correspond to such a distribution. The author gives a method of successive approximations for finding these distributions. It is pointed out that for the vast majority of distributions, the optimal code will contain in general nodal values of the regions of correct reception except for a single code character. This is illustrated by the two examples (Tables 1 and 2). In Table 1, n = 3 and the non-nodal value assigns

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On the Best Distribution of Regions of Correct Reception With Statistical-Noise-Suppressing Coding

two combinations to s_2; in Table 2, n = 12, 450 combinations are assigned to s_4. Acknowledgments are expressed to Ye.B.Popov for assistance in the work. There are 4 figures, 2 tables and 4 Soviet references.

SUBMITTED: June 11, 1960

X

Card 3/3

Mel'nikov, Yu.N.

82177

S/106/60/000/07/01/005

16.6800

AUTHOR: Mel'nikov, Yu.N.

TITLE: A Receiving Device Permitting the Realization of a Statistically Noiseproof Coding 16

PERIODICAL: Elektrosvyaz', 1960, No. 7, pp. 13 - 17

TEXT: The principle of a receiving device is described permitting a correction of a different number of errors in various code combinations. It is based on the reception of the signal "as a whole" (v tselom), described by A.A. Kharkevich (Ref. 3). For this purpose, the receiving device must contain a memory unit storing all signals which can be possibly transmitted. The memory must also store the signal received. The latter is then compared to all signals which can be possibly transmitted according to the formula:

$$R = \sum_{i=1}^{n} y_i \, x_{iR} \, , \qquad (4)$$

where R is the correlation function between the transmitted and the received signal. A block diagram of the receiving device is given (Fig. 1). The re-

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A Receiving Device Permitting the Realization of a Statistically Noiseproof Coding

generated signal is fed in parallel code to flip-flop circuits. In case the regenerated signal arrives in successive code, it must be converted to parallel code. The signal is recorded in binary code by the flip-flop circuits. Each flip-flop has two outputs. One of the outputs carries positive voltage, regardless whether a 0 or a 1 has been received. All flip-flop outlets are connected to the vertical buses of a resistance matrix, which is used as a memory unit. The information of the received signal is located on one half of the vertical matrix buses. The horizontal buses contain the information on the signals which can be possibly transmitted. Each possible code combination corresponds to a certain matrix line. The vertical and horizontal buses of the matrix are either connected by resistors at their intersections, or there are no contacts. The comparison of the signal received with all those signals which can be possibly transmitted is performed in one cycle. At the outlet of each horizontal bus a voltage is obtained proportional to the correlation function between the signal received and the one of those signals which can be possibly transmitted and to which the given horizontal bus corresponds. The identification of the signal received with one of the signals which can be possibly transmitted is based on

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A Receiving Device Permitting the Realization of a Statistically Noiseproof Coding

indicating the region of correct reception in which the signal received is located. The receiving device described differs in this respect from other, similar devices, where the signal received is identified with one of the signals which can be possibly transmitted and from which it differs least. The voltage, proportional to the correlation function between the signal received and the one of those signals which can be possibly transmitted, is fed to an output unit having elements whose threshold of operating can be adjusted in accordance with the magnitude of the region of correct reception. The output unit must contain as many threshold elements as required by the type of code used. The method of indicating the region of correct reception of the signal received makes it possible to use regions of correct reception which are different in magnitude. This way it is possible to use the statistics of messages for increasing the noiseproofness, i.e., a statistical noiseproof coding can be achieved. K.A. Meshkovskiy's investigations played an important part in the development of principles of statistically noiseproof coding. The receiving device described performs simultaneously with the error correction the function of a decoder in contrast to the device described by M.A. Gavrilov and others (Ref. 6). In addition, a device may be used indicating a possible error by a special signal.

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A Receiving Device Permitting the Realization of a Statistically Noiseproof Coding

A seven-unit Hamming code was used in the experimental model correcting all single errors. The experimental model of the receiving device can be converted for operation with any, but not higher than 16-unit binary codes, having not more than 32 possible code combinations. The differences between the present device and a similar one described by A.V. Prosin and A.N. Tsvetkov (Ref. 7) are briefly discussed. Subject receiving device will obviously find application in information transmission systems using noiseproof or statistically noiseproof coding. The author expresses his gratitude to Corresponding Member of the AS, UkrSSR, A.A. Kharkevich and to Candidate of Technical Sciences, K.A. Meshkovskiy, for their assistance and attention given to this paper. There are 2 diagrams and 7 references: 3 Soviet, 2 American and 2 British.

SUBMITTED: January 23, 1960

Card 4/4

S/044/62/000/003/082/092
C111/C333

AUTHOR: Mel'nikov, Yu. N.

TITLE: The distribution of the domains of correct reception according to the criterion of the maximum of the medium probability of correct reception and according to the criterion of the maximum of transmitted information

PERIODICAL: Referativnyy zhurnal., Matematika, no. 3, 1962, 59, abstract 3 V 315. ("Probl. peredachi informatsii". No. 10.M., AN SSSR, 1961, 24 - 34)

TEXT: For a symmetric binary channel and the transmission of 2 signals, which differ in all points, the question of optimal decomposition of the signal space at the output into the reception areas of each single of these signals is investigated.
Note of the reviewer (R.L. Dobrushin) : The remarks of the author on the solution of this problem for n signals are wrong.

[Abstracter's note : Complete translation.]

Card 1/1

S/191/63/000/003/019/022
B101/B186

AUTHORS: Tsipes, L. Ya., Sokolov, A. D., Mel'nikov, Yu. V.

TITLE: Effect of pressure on the strength properties of standard samples made of phenol molding powders

PERIODICAL: Plasticheskiye massy, no. 3, 1963, 65 - 68

TEXT: The problem of transmitting pressure to the molded material and its influence on the strength properties are discussed. The effective pressure measured by wire strain gages and its influence was studied. A test series in a plunger mold using pressed K-15-2 (K-15-2), K-17-2(K-17-2), K-18-2 (K-18-2), and K-20-2(K-20-2) molding powders (size of samples 120·15·10 mm at 155°C, molding time 6 min) showed the measured pressure to be consistent with the calculated value if the amount of molding powder filled into the mold left a 0.3 - 0.5 mm gap between force and matrix after molding. In this case, the values of impact and bending strengths are higher than without the gap. Thus the impact strength of K-15-2 without gap is 5.4 kg·cm/cm^2, the bending strength is 668 kg/cm^2. With a 0.3 - 0.5 mm gap, these values are 6.3 and 946, respectively. Similar results were obtained by simul-

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B101/B186

taneous molding of three tablets at 185°C, 4-5 min preheating of material at 180°C, molding time 6 min, molding pressure 250 - 300 kg/cm^2. The strength values, however, were lower than from molding of single tablets. Conclusion: Molds for standard samples must be designed such that the pressure on the material is preserved throughout the whole molding process without being reduced by a contact between force and matrix. In the "Karbolit" plant these results were applied to constructing a mold for standard samples similar to that described in DIN 53470. Six bars connected by a 1.5 mm film are molded ("chocolate bars"). Based on good experience, these molds are recommended for the production of standard samples for continuous checking of molding powders. There are 2 figures and 3 tables.

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VESELOV, V.A.; MEL'NIKOV, Yu.N.

Contact preheating of materials intended to be pressed. Prom. energ. 15 no.6:15 Je '60. (MIRA 13:7)
(Electric heating) (Plastics)

MEL'NIKOV, Yu.N.; OL'DEROGGE, G.B.

Some problems of interference rejection in the transmission of digital information in presence of group errors. Elektrosviaz' 19 no.5:50-56 My '65. (MIRA 18:6)

28 (5)

AUTHORS: Yankovskiy, V. M., Mel'nikov, Yu. P. SOV/32-25-5-33/56

TITLE: Plant for the Investigation of the Welding of Metals by Compression in Vacuum (Ustanovka dlya issledovaniya svarki metallov davleniyem v vakuume)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 5, pp 611 - 613 (USSR)

ABSTRACT: The plants described in publications for the purpose of testing the consolidation or welding of metals in hard state have two disadvantages - the temperature of the sample is not immediately measured and the welding pressure is not regulated during the process (Ref 1). An apparatus is described which permits investigations of furnace welding in vacuum. The construction of the apparatus facilitates also the welding of samples in a protective atmosphere. The diagrams of the construction system of the vacuum chamber (Fig 1) as well as the arrangement of the entire plant (Fig 2) are mentioned. The description of the vacuum chamber indicates among other things that the welding pressure is transmitted by a wire-wound resistor. A graphite spiral is the heater. The vacuum system permits vacuum treatment at $1 \cdot 10^{-4}$ mm torr and has two vacuometer

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Plant for the Investigation of the Welding of Metals by Compression in Vacuum SOV/32-25-5-33/56

vessels (LT-2 and LM-2). The temperature of the sample is measured by means of a potentiometer. The measuring system for the welding pressure has, apart from the above-mentioned resistor which is fastened to an elastic axis (onto which the pressure is transmitted), also an amplifier with a milliammeter graduated in kg. It is possible to record weldings at a pressure of 1 - 200 kg with an accuracy of 1%. This plant is capable of heating samples 5 mm thick to temperatures of from 1300-1400° within 2-5 minutes. The operational cycle of welding amounts to 20 minutes. There are 2 figures and 1 reference.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy trubnyy institut (All-Union Scientific Research Pipe Institute)

Card 2/2

LOPATKIN, N.A., dots.; MEL'NIKOV, Yu.P.

Intubation anesthesia in urology. Urologiia 24 no.2:3-11 Mr-Ap '59.
(MIRA 12:12)

1. Iz urologicheskoy kliniki (zav. - prof. A.Ya. Pytel') II Moskovskogo meditsinskogo instituta im. N.I. Pirogova.
(URINARY TRACT, surg.
intubation anesth. (Rus))
(ANESTHESIA, ENDOTRACHEAL,
intubation anesth. in urol. surg. (Rus))

S/170/60/003/03/20/034
BC14/B007

AUTHOR: Mel'nikov, Yu. P.

TITLE: An Instrument for the Measurement of the Pulse Parameters of the Ferrite Core of Millimicrosecond Pulse Transformers

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 3, pp. 113-116

TEXT: In the introduction the drawbacks of a previously described instrument (Ref. 1) for the investigation of millimicrosecond pulse transformers are pointed out. The author mentions the importance of the correct selection of the pulse generator, and discusses the thyratron-generator shown in Fig. 1. The rectangular pulses with 400 v amplitude voltage have a time of rise of $10 \cdot 10^{-9}$ seconds. Further, the author investigates the relations between the circuit elements. For the purpose of warranting the necessary induction and field strength for all types of cores, the circuit elements must be suitably selected. It was found that the error of parameter determination according to experimental curves depends on the ratio between the thickness of the oscillogram-curves and the geometric dimensions.

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An Instrument for the Measurement of the Pulse Parameters of the Ferrite Core of Millimicrosecond Pulse Transformers

S/170/60/003/03/20/034
B014/B007

Fig. 2 shows the oscillogram of the transition characteristic of the primary coil of the transformer with toroidal core. The circuit diagram of the complete instrument as shown in Fig. 3 comprises the efficient pulse generator, a master oscillator, and the equivalent unit. The maximum measuring error of this circuit which is described in detail amounts to 20%. There are 3 figures and 2 Soviet references.

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S/108/60/015/06/03/006
B007/B014

AUTHORS: Mel'nikov, Yu. P., Member of the Society, Shats, S. Ya., Member of the Society

TITLE: A Millimicrosecond Blocking Generator

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 6, pp. 36-44

TEXT: The millimicrosecond range is characterized by the fact that the time required for the formation of the pulse peak has the same order of magnitude as the time needed for the formation of the front. In this connection it is pointed out that the parameters of the circuit must not be divided into "large" and "small" ones, and that an analysis cannot be based on the assumption that the "rapid" processes (the front) are determined by "small", inert elements and the "slow" ones (the peaks) by "large" elements. The duration of all pulse sections is simultaneously dependent on all parameters of the circuit. It is pointed out that there is a range with optimum relations between the circuit parameters by means of which it is possible to obtain a pulse of the shortest duration with a sufficient amplitude. The authors studied the processes taking place

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A Millimicrosecond Blocking Generator

S/108/60/015/06/03/006
B007/B014

in a millimicrosecond blocking generator, with special regard to the above-mentioned results. Next, a method is developed for the technical calculation of a blocking generator on the basis of this study. The authors used A. A. Raspletin's method of the dynamic characteristics of the blocking generator (Ref. 1), which were approximated by broken lines (Ref. 2). First, the pulse transformer is studied. The parameters of the pulse in the circuit under consideration are largely dependent on the properties of the transformer core. The equivalent-circuit diagram of the coil that has a ferrite core (Fig. 3; Ref. 3) is recommended for quantitative calculations. Recommendations are given for the selection of the winding and the core material. Next, the authors study a millimicrosecond blocking generator controlled by the inductance. It is shown that the inductance of the transformer may have values at which the shortest duration of the pulse with a sufficient amplitude is warranted for a given tube. The pulse is divided into various stages (front, peak, clip) according to the boundaries of the characteristic sections of the dynamic characteristics (Fig. 2). The formation of the front, the peak, and the clip is studied, and the pertinent formulas are

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A Millimicrosecond Blocking Generator

S/108/60/015/06/03/006
B007/B014

derived. Calculations have shown that the divergence in the determination of pulse parameters from these and exact formulas is 10 per cent at most Fig. 6 shows how the pulse inductance should be chosen in order to obtain a pulse of shortest duration and with a sufficient amplitude. Calculation and experimental verification are demonstrated. From this it resulted that in most cases the divergence does not exceed 20 per cent. There are 6 figures and 5 Soviet references.

√B

SUBMITTED: July 3, 1959 (initially)
September 9, 1959 (after revision)

Card 3/3

[illegible]
S/108/60/015/011/001/012
[illegible]

9.2586

AUTHORS: Mel'nikov, Yu.P., Shats, S.Ya., Members of the Society

TITLE: A millimicrosecond blocking oscillator with a small relaxation capacitor

PERIODICAL: Radiotekhnika, v. 15, no. 11, 1960, [illegible] - [illegible]

TEXT: A small value of the relaxation capacitor C of the blocking oscillator results in a small value of the anode current and in a shorter duration of the top of pulses in the millimicrosec. region. In the present article, the authors show how for a given ratio of the total strays C_s to the working (relaxation) capacitance C, for a given inductance L of the transformer and a given rate of increase of the triggering voltage V_c, it is possible to decrease the total length of the pulse down to the value 2 to 3 times greater than T_0 instead of 8 to 9 times as shown earlier by the authors (Ref. 1: Radiotekhnika, v. 15, no. 6, 1960) preserving at the same

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time its amplitude. Here $T_0 = \frac{C_n}{S}$ is the time constant of the circuit, S being the working pulse slope of the tube. Considering the cct o Fig. 1

Fig.

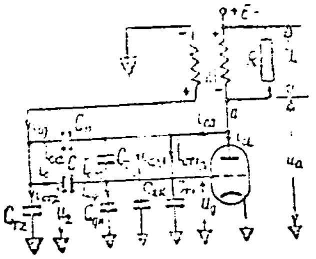

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Fig.

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and assuming the leakage inductance to be zero /Abstractor's note: It does not affect the pulse forming action as shown in Ref. 1 (Op. cit.)/ and writing the voltage equations

$$U_g = (E_a - U_a)n - U_c; \quad n = \frac{U_2}{U}; \quad U_{2a} = U_2 - U_a; \quad U_{ga} = U_g - U_a \qquad (1)$$

the expressions for capacitive anode and grid currents are obtained

$$i_{ca} = C_{a\kappa}\frac{dU_a}{dt} + C_{T1}\frac{dU_a}{dt} - C_{12}\frac{dU_{2a}}{dt} - C_{ag}\frac{dU_{ga}}{dt} = [C_{a\kappa} + C_{T1} + C_{12}(n-1) + C_{ag}(n-1)]\frac{dU_a}{dt} + C_{ag}\frac{dU_c}{dt};$$

$$i_{cg} = C_{T2}\frac{dU_2}{dt} + C_{12}\frac{dU_{2a}}{dt} + C_{g\kappa}\frac{dU_g}{dt} + C_{ag}\frac{dU_{ga}}{dt} = \left[C_{T2} + C_{12}\left(1 + \frac{1}{n}\right) + C_{g\kappa} + C_{ag}\left(1 + \frac{1}{n}\right)\right]\frac{dU_2}{dt} - (C_{g\kappa} + C_{ag})\frac{dU_c}{dt}.$$

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Referring i_{cg} into the primary (anode) circuit and denoting

$$[C_{ak} + C_{T1} + C_{12}(1+n) + C_{ag}(n+1)] = C_1,$$

$$\left[C_{T2} + C_{12}\left(1+\frac{1}{n}\right) + C_{gk} + C_{ag}\left(1+\frac{1}{n}\right)\right] = C_2,$$

$$C_{ag} + \text{[illegible]}\ C_{ag}) = C_\Delta; \quad C_1 + n^2 C_2 = C_n,$$

the total current in the strays is obtained

$$i_{cn} = C_n \dot{U}_a + C_\Delta \dot{U}_c.$$

Kirchhoff's equation for point a becomes

$$i_a + C_n \dot{U}_a + C_\Delta \dot{U}_c = nC\dot{U}_c + i_R + \text{[illegible]}$$ or $$i_a = i_R + i_m + C_n \dot{U} + (nC - C_\Delta)\, i_c$$

This equation corresponds to the equivalent cct. given in Fig. 2.

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Fig. 2.

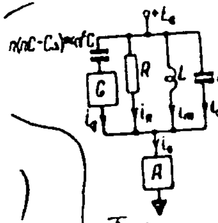

Fig.
~~Рис.~~ 2

Since usually $C \gg C_n$ and $C_\Delta \ll C_n$,

$$nC - C_\Delta \approx nC \tag{2}$$

is true. Assuming next the broken line approximation of the dynamic tube characteristics as cited by V.I. Rakov, and S.Ya. Shats (Ref. 2: Osnovy impul'snoy tekhniki (Principle of Impulse Techniques) Chast' III, izd. VMAKV im. A.N. Krylova, Leningrad, 1953) and their

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displacement due to the voltage at the capacitor C (the increase of the capacitor voltage ΔU_c produces a displacement of the straight line sections in the abcissa direction equal to $\frac{1}{n}\Delta U_c$ and the displacement of inflection points by $\beta\frac{1}{n}\Delta U_c$, where $\beta = \frac{S_{a1}}{S_{a1}+S_{a2}}$,

$$C_a\dot{U} + \frac{1}{L}\int U dt + nC\dot{U}_c = S_{a1}\left(U - \frac{1}{n}U_c\right) - \frac{U}{R};\ U = \frac{1}{n}U_c + \frac{1}{n}\frac{C\dot{U}_c}{S_{a1}}.$$

is obtained which determines the law of the formation of the leading edge of the pulse. With the ramp triggering pulse (rate of increase v_0) of

$$U(t) = \frac{\frac{S_{g1}}{C}+\lambda_1}{(\lambda_1-\lambda_2)(\lambda_1-\lambda_3)}e^{\lambda_1 t} + \frac{\frac{S_{g1}}{C}+\lambda_2}{(\lambda_2-\lambda_1)(\lambda_2-\lambda_3)}e^{\lambda_2 t} + \frac{\frac{S_{g1}}{C}+\lambda_3}{(\lambda_3-\lambda_1)(\lambda_3-\lambda_2)}e^{\lambda_3 t},\ (3) \quad (3)$$

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where λ_1, λ_2, λ_3 are the roots of the characteristic equation

$$\lambda^3+\lambda^2\frac{C_nS_{g1}-CS_{a1}-CS_{g1}}{C_nC}+\lambda\frac{S_{a1}LS_{g1}\left(\frac{1}{n}-1\right)+C}{C_nLC}+\frac{S_{g1}}{C_nLC}=0.$$

The graphs given show that the decrease in the rise time of the triggering voltage in the inductance and in the value of relaxation (working) capacitance leads to a slower rise time of the leading edge. The final value of the leading edge is at a certain $U = U_1' \approx U_1$. To determine the law of formation of the pulse top the anode current is written as

$$i_a=S_{a1}\left(U_1-\frac{1}{n}U_{a1}\right)-S_{a2}(U-U_1), \quad (12)^{(5)} \qquad (5)$$

where the subscript 1 denotes the voltage corresponding to the termination of the leading edge. For the grid current

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$$i_g = \left[U - U_1 \frac{1+1}{C}\int i_g dt\right] S_{g2} + S_{g1}(U_1 - U_{c1}). \quad (6) \qquad (6)$$

is obtained, so that combining (5) and (6) the equation for the top pulse

$$\left.\begin{aligned} &LCC_n\ddot{U} + [LC_nS_{g2}(1+\beta) + LCS_{a2} + LCS_{g2}]\ddot{U} + \\ &+ [LS_{a2}(1+\beta) + LS_cS_{g1} + C]\dot{U} + S_{g2}(1+\beta)U = 0. \end{aligned}\right\} \quad (7) \qquad (7)$$

is obtained. The solution of Eq. (7) for given boundary conditions (i_{m1}, U_{c1}, U_1) are given in Fig. 5

Fig. 5.

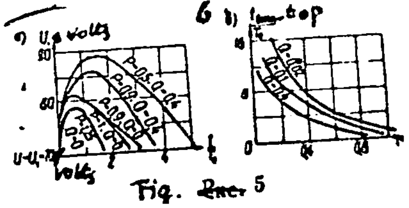

Fig. ~~Рис.~~ 5

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for different values of P and Q. It may be seen from the graph that reducing L and C results in some decrease of amplitude of the pulse and in a decrease of the duration of the top. The law of formation of the trailing edge is given by a differential equation of the third order similar to that for the leading edge. As shown in Fig. 6 which represents the solution of this equation, the trailing edge duration changes little for the values of P and Q contained between D and 1.

Fig. 6.

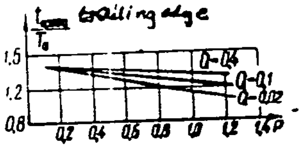

Fig. ~~Рис.~~ 6

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In order to determine optimal values of P and Q the overall pulse duration t_p was determined by the continuous solution of the differential equation of the blocking oscillator using the electronic computer MN-2, from which graphs of t_p against the parameter $\xi = \frac{U_{max}}{U_1}$ and of $\frac{t_p}{T_o}$ against P and Q are given. The dependence of the pulse duration on P and Q for $0.1 \leqslant P \leqslant 1$, and $0.1 < Q \leqslant 1$ can be approximated by

$$\frac{t_p}{T_0} \approx 12 e^{-2(P+Q)} + 6 e^{-0,1P}; \quad (8) \qquad (8)$$

and for $P > 1$ and $Q > 1$ by

$$\frac{t_p}{T_0} \approx 12 e^{-2(P+Q)} + 6 e^{-0,2P}. \quad (8a) \qquad (8a)$$

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It follows from Eq. (8a) that a small duration of pulses can be obtained having L and C small, provided the rise time of triggering voltage v_o is very fast. To prove the theory several experiments have been designed based on various types of tubes including 6N3P, 6N15P, 6N6P, 6E5P, 6S3P and 6S15P. The pulses were observed on a special oscilloscope having the velocity of the time base 300 cm/microsec. The parameters of ferrite cores were determined by comparing the transient characteristics of the transformer with those of an equivalent cct. The pulse parameters were determined from the formulae in the article; compared with experimental data the discrepancies did not exceed 20 %. Two examples of experimental results are given. 1) Tube 6N3P with the pulse slope $S = S_{a1} - S_{g1} = 4.7$ mA/V for $n = 1$. The rate of build-up of trigger voltage $v_o = 100$ V/microsec. $C_n = 33$ pF, duration of pulse required 50 nsec. The ferrite core used with limit working frequency $f_{lim} \approx 10$ Mc/s (ferrite type F-600). The values obtained were: $L_f = 12$ microhenry,

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$L = \frac{L_f}{P}$ = 17.2 microhenry, $C = \frac{C_n}{Q}$ = 165 nf. 2) Tube 6S15P: Pulse duration of the order of 5 nsec, $v_o = \frac{100V}{15\ nsec}$ (from a millimicrosec blocking oscillator), C_n = 40 pF, S = 30 mA/V. $L = \frac{L_f}{P}$ = 4.3 microhenry, $C_n = \frac{C_n}{Q}$ = 68 pF. There are 7 figures and 2 Soviet-bloc references.

ASSOCIATION: /Abstractor's note: Because of the photostat supplied the Association could not be determined/

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AGAYEV, Yu.M.; MEL'NIKOV, Yu.S.

Pickup for registering the deviation of circuit voltage from the rated value. Priborostroenie no.1:18-20 Ja '64. (MIRA 17:2)

RIKKONEN, V.M., kand. tekhn. nauk; [illegible]

Calculation of the parameters of electrical annealing of a moving wire. Elektrotekhnika 35 no.9:34-35 S '64. (MIRA 17:11)

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AUTHOR: Shaldin, Yu. V.; Pisarevskiy, Yu. V.; Mel'nikov, Yu. S.

ORG: None

TITLE: Measurement of the electro-optic effect in crystals

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 5, 1965, 463-467

TOPIC TAGS: electrooptic effect, crystal optic property, measuring instrument

21,44,55

ABSTRACT: The best method available for the measurement of the electro-optic effect in crystals is the method employing a $\lambda/4$ plate described elsewhere (O'B. R. Carpenter, JOSA, 40, 4, 225, 1950.). The problem of measuring the electro-optic coefficients may be simplified by the measurement of the voltage $U_{\lambda/2}$ which is required to establish a phase difference in $\lambda/2$, followed by a calculation of the electro-optic coefficients. The authors present a description of a set-up for the semiautomatic measurement of $U_{\lambda/2}$, together with a schematic diagram (Fig. 1). The method described makes it possible to shift from manual to automatic control. In conclusion authors express their deep gratitude to L. M. Belyayev 44,55

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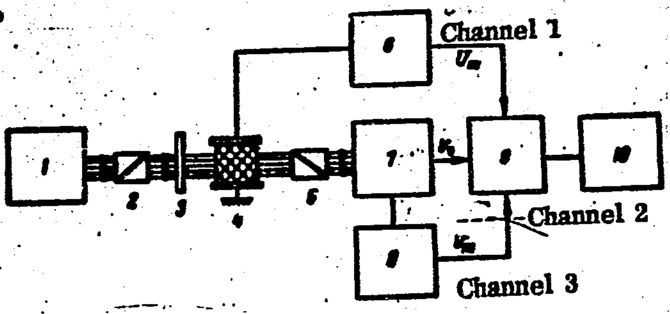

Fig. 1. Schematic diagram of a set-up for the measurement of voltage $U_{\lambda/2}$, necessary for the creation of a phase difference in $\lambda/2$ between an ordinary and an extraordinary waves in crystals: 1 - SPM-1 monochromator; 2 - polarizer; 3 - achromatic $\lambda/4$ plate; 4 - specimen; 5 - analyzer; 6 - voltage generator; 7 - photodetector; 8 - ORION TT-1103 amplifier; 9 - BP-2 multiplier; 10 - indicator.

for a useful discussion. Orig. art. has: 2 figures and 26 formulas.

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